5. ECONOMIC STATUS OF HMS FISHERIES

In 1996, the Small Business Regulatory Enforcement Fairness Act amended the Regulatory Flexibility Act (RFA). This amendment added section 610 to the RFA. Section 610 requires NMFS to periodically review rules that had or will have a significant economic impact on a substantial number of small entities. The purpose of this review is to determine whether the significant rules should be continued without change or if they should be amended or rescinded in order to minimize the impact on small entities. The review should examine the impact of these rules consistent with the stated objectives of applicable statutes. NMFS has 10 years after the adoption of each rule in which to review the impact of the rule.

Additionally, under the Magnuson-Stevens Act, NMFS must prepare an annual SAFE report in order to account for the best scientific information available. Each SAFE report should, among other things, provide information on the economic condition of the recreational and commercial fishing interests, communities, and industries.

Thus, both the SAFE report and Section 610 to the RFA require similar information. For this reason, NMFS believes that the following section of the 2001 SAFE Report should fulfill NMFS' requirements under both the Magnuson-Stevens Act and Section 610 of the RFA. In addition to the information needed to fulfill Section 610 of RFA, this section will provide comprehensive economic information for all components of HMS fisheries including price and cost information.

5.1 Commercial Fisheries

5.1.1 Economics of Commercial Fisheries across the United States in General[1]

In 1999, the total commercial landings at ports in the 50 states by U.S. fishermen were 9.3 billion pounds and were valued at $3.5 billion. This is an increase of $338.6 million compared with the estimated 1998 value and a decrease of $19.6 million from the estimated 1996 value. The average ex-vessel price for all fishery products increased from 36 cents in 1996 to 37 cents in 1999. However, no consumer price index conversions were made for these comparisons. The 1999 ex-vessel index indicated that only 19 species of the 33 species tracked had increasing ex-vessel prices compared to the 1998 index.

The estimated value of the 1999 domestic production of all fishery products was $7.3

[1] All the information and data presented in this section was obtained from NMFS 1997a and NMFS 2000a.

billion. This is $27.3 million less than the estimated value in 1998. The estimated value of domestic production in 1996 was $7.4 billion. The total import value of fishery products was $17.0 billion in 1999. This is an increase of 1.4 billion from 1998. The total import value in 1996 was $13.1 billion. The total export value of fishery products was $10.0 billion in 1999. This is an increase of $1.3 billion from 1998. The total export value in 1996 was $8.7 billion.

Consumers spent an estimated $52.3 billion for fishery products in 1999 including $35.6 billion at food service establishments, $16.4 billion for home consumption, and $326.6 million for industrial fish products. The commercial marine fishing industry contributed $27.2 billion to the U.S. Gross National Product in 1999. In 1996, consumers spent an estimated $41.2 billion including $27.8 billion at food service establishments, $13.2 billion for home consumption, and $283.9 billion for industrial fish products. The commercial marine fishing industry contributed $21.0 billion to the U.S. Gross National Product in 1996.

In both 1996 and 1999, Louisiana, Massachusetts, and Maine ranked in the top five states in value of commercial landings (Table 5.1). No HMS ranked in the top ten species for the United States in terms of landings or value for 1996 or 1999. The value of all HMS species (both Atlantic and Pacific) constituted 9.5 percent and 8.5 percent in 1996 and 1999, respectively, of the total U.S. finfish value. The ex-vessel values of HMS landings are listed in Table 5.2. The values of processed HMS products are listed in Table 5.3.

Table 5.1 **The top five states in the United States as ranked by value of commercial landings.** Source: NMFS, 1997a; NMFS, 2000a.

Rank in value of commercial landings	1996		1999	
	State	Value	State	Value
1	Alaska	$1.2 billion	Alaska	$1.1 billion
2	Louisiana	$267.3 million	Louisiana	$302.7 million
3	Massachusetts	$231.4 million	Maine	$265.2 million
4	Florida	$205.2 million	Massachusetts	$260.2 million
5	Maine	$200.9 million	Texas	$209.2 million

Table 5.2 **U.S. domestic commercial landings in thousand dollars of HMS, by Species. Note: Value includes Atlantic and Pacific landings.** Source: NMFS, 1997a; NMFS, 2000a.

Species		1996	
Sharks	Dogfish	11,804	5,951

Species		1996	1999
	Other	10,824	6,625
	Total	22,628	12,576
Swordfish		36,494	33,436
Tunas	Albacore	30,157	21,932
	Bigeye	23,673	25,428
	Bluefin	21,857	15,573
	Little (Tunny)	--	626
	Skipjack	7,084	5,221
	Yellowfin	27,060	17,076
	Unknown	425	398
	Total	110,256	86,254
Total value all HMS		169,378	132,266
Total value all finfish species		1,790,966	1,558,292

Table 5.3 **U.S. production in thousand dollars of HMS, by Species.** Note: Value includes Atlantic and Pacific caught fish. Source: NMFS, 1997a; NMFS, 2000a.

Product	Species		1996	
Fresh and Frozen Fillets	Shark		5,992	2,486
	Swordfish		34,277	48,062
	Tuna		62,456	79,932
	Total HMS		102,725	130,480
Fresh and Frozen Steaks	Shark		27	168
	Swordfish		12,725	13,233
	Tuna		14,669	17,307
	Total HMS		27,421	30,708
Total Fillets and Steaks, all finfish			885,665	834,531
Canned products	Tuna	Albacore	362,690	411,622
		Lightmeat	594,234	534,159

Product	Species		1996	
		Total	956,924	945,781
	Total, all finfish		1,298,489	1,390,637

5.1.2 Ex-Vessel Prices of Atlantic HMS

The average ex-vessel prices per lb dw for 1996 and 1999 by Atlantic HMS, major gear types, and area are summarized in Table 5.4. The average ex-vessel prices per lb dw for 1996 and 1999 by species and area are summarized in Table 5.5. For both of these tables, 1999 dollars are converted to 1996 dollars using the consumer price index conversion factor of 0.94. This conversion allows for easy comparisons in price. The ex-vessel price indices for some HMS for all commercial landings in the United States can be found in Table 5.6. The ex-vessel price depends on number of factors including the quality of the fish (e.g. freshness, fat content, method of storage), the weight of the fish, the supply of fish, and consumer demand.

Tables 5.4 and 5.5 indicate that the average ex-vessel prices for bigeye tuna have generally increased in the Gulf of Mexico and South Atlantic regions and have generally decreased in the Mid-Atlantic and North Atlantic regions. The gears used also influenced the average price of bigeye tuna with longline-caught fish bringing the highest average value in 1999 in the Gulf of Mexico and South Atlantic while net-caught bigeye tuna received the highest average value in the mid-Atlantic and North Atlantic. The mid-Atlantic region is the only region that had consistent uses of gear types in both 1996 and 1999. This region also showed a switch from high average values for handgear- and trawl-caught bigeye tuna to high average values for bottom longline- and net-caught bigeye tuna.

Average ex-vessel prices for bluefin tuna have generally declined in all regions (Table 5.5), except for bluefin tuna caught by pelagic longline gear (Table 5.4). This is contrary to the ex-vessel value of bluefin tuna across the United States (Table 5.6). The highest average ex-vessel prices were found in the North Atlantic (Table 5.5). As with bigeye tuna, the combination of region and gear used to land bluefin tuna made a difference in the ex-vessel price (Table 5.4). In the Mid-Atlantic, bluefin tuna caught with pelagic longline gear had the highest average ex-vessel price in 1999. In the North Atlantic, handgear-caught fish received the highest average price per pound in 1999. In 1996, bluefin tuna caught with handgear had higher average prices than those caught with longline, but purse seine-caught fish had the highest ex-vessel prices in the North Atlantic, and gillnet-caught fish (although few in number) had the highest average price in the Mid-Atlantic. The ex-vessel prices for bluefin tuna can be influenced by many factors, including market supply and the Japanese Yen/U.S. Dollar (¥/$) exchange rate. Figure 5.1 shows the average ¥/$ exchange rate, plotted with average ex-vessel bluefin tuna prices, from 1971 to 1999. Ex-vessel prices in 1999 were higher than in 1998, and preliminary information for 2000 indicate that ex-vessel prices improved further. This could be because the pace of landings in the General category in 1999 and 2000 was slower than in recent years and may have reduced market gluts.

As with bigeye tuna, the average ex-vessel prices for yellowfin tuna have generally increased in the South Atlantic and decreased in the mid-Atlantic and North Atlantic (Table 5.5). No data was available from 1996 in the Gulf of Mexico region. In the United States, the ex-

vessel price of all yellowfin tuna has generally decreased since 1995 (Table 5.6), with a small deviation in this trend during 1997. Gears influenced the average prices, but changed between regions (Table 5.4). In 1999, the highest average prices for yellowfin tuna caught by pelagic longline gear. In the North Atlantic regions handgear produced the highest priced fish on average in 1996 and pelagic longline produced the highest priced fish on average in 1999.

The average ex-vessel prices for other tunas have generally decreased in all regions except the Gulf of Mexico where it increased. (Table 5.5). The average price of other tunas is the lowest in the Gulf of Mexico compared to the other regions. The ex-vessel prices for all tunas in the United States has generally declined from 1996 to 1999 (Table 5.6). In both the South Atlantic and mid-Atlantic regions, the highest average price was obtained using longline gear, either bottom or pelagic (Table 5.4). In the North Atlantic, the highest average price was obtained using handgear.

In the South Atlantic region, the average ex-vessel price for swordfish has generally increased while the average ex-vessel price has decreased in the mid-Atlantic and North Atlantic regions (Table 5.5). Overall in the United States the ex-vessel price has decreased from 1996 to 1999 (Table 5.6). The highest average ex-vessel prices changed by area, region, and year and did not have a pattern (Table 5.4).

The average ex-vessel price for large coastal sharks (LCS) increased in the Gulf of Mexico region, remained the same in the South and mid-Atlantic regions, and decreased in the North Atlantic region (Table 5.5). The highest average prices were generally obtained with pelagic or bottom longline gear except in the mid-Atlantic where the highest average values were obtained using handgear (Table 5.4).

The average ex-vessel price for pelagic sharks increased in the South Atlantic and decreased in the mid- and North Atlantic regions (Table 5.5). The highest average prices were found with a variety of gears, mainly longline and handgear (Table 5.4).

Small coastal sharks (SCS) have the lowest average ex-vessel price of all shark species but this price generally increased in all regions (Table 5.5). No data was available in the North Atlantic region for this species because these species are generally not found near the states in that region. In the Gulf of Mexico region, the highest average price was obtained for net gears while in the South Atlantic the highest average price was obtained for pelagic and bottom longline gears (Table 5.4).

The average ex-vessel price for shark fins has decreased in all regions, except the Gulf of Mexico which had no data available for 1996 (Table 5.5). The highest average values are generally found in the Gulf of Mexico and South Atlantic regions and were generally obtained using bottom longline (Table 5.4)

Table 5.7 summarizes the average value of the fishery based on average ex-vessel prices and the weight reported landed as reported in the United States National Report (NMFS 2000b), the 1997 and 2000 Shark Evaluation Reports (NMFS, 1997b; Cortes, 2000), as well as prices and weights reported to the Northeast Regional Office by Atlantic bluefin tuna dealers. These values indicate that the estimated total value of Atlantic HMS fisheries in 1996 dollars has declined 17.9 percent from approximately $68.1 million in 1996 to approximately $55.9 million in 1999. The bigeye tuna, other tunas, and small coastal shark fisheries were the only Atlantic HMS fisheries that increased in value (by 75 percent, 6 percent, and 178 percent respectively). The value of the pelagic shark fishery decreased the most (45 percent) followed by the fisheries for swordfish (30 percent) and large coastal shark (21 percent).

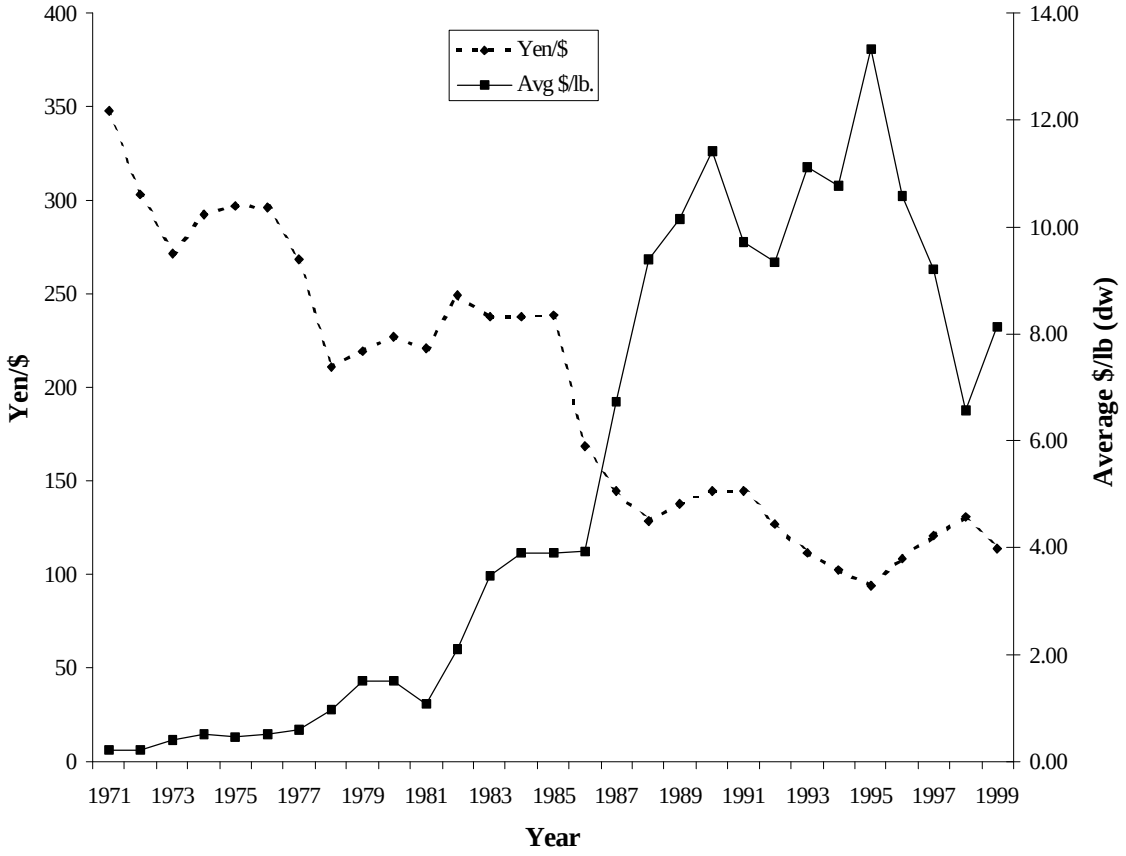

Figure 5.1 **Average Annual Yen/$ Exchange Rate and Average U.S. BFT Ex-vessel $/lb (dw) for all gears: 1971-1999**. Source: Federal Reserve Bank (www.stls.frb.org)

Table 5.4 **Average ex-vessel prices per lb. dw for Atlantic HMS by gear and area. 1999 dollars are converted to 1996 dollars using the consumer price index conversion factor of 0.94.** Source: Dealer weigh out slips from the Southeast Fisheries Science Center and Northeast Fisheries Science Center, and bluefin tuna dealer reports from the Northeast Regional Office. HND=Handline, harpoon, and trolls, PLL=Pelagic longline, BLL=Bottom longline, Net=Gillnets and pound nets, TWL=Trawls. Gulf of Mexico includes: TX, LA, MS, AL, and the west coast of FL. S. Atlantic includes: east coast of FL. GA, SC, and NC dealers reporting to Southeast Fisheries Science Center. Mid-Atlantic includes: NC dealers reporting to Northeast Fisheries Science Center, VA, MD, DE, NJ, NY, and CT. N. Atlantic includes: RI, MA, NH, and ME. For bluefin tuna, all NC landings are included in the Mid-Atlantic.

Species	Gear	Gulf of Mexico		S. Atlantic		Mid-Atlantic			
		1996	1999	1996	1999	1996	1999	1996	
Bigeye tuna	HND	$0.68	$2.00	$1.30	$1.90	$5.74	$3.40	$3.69	$3.21
	PLL	-	$3.80	$1.33	$2.70	$3.51	$3.00	$3.36	$3.06
	BLL	-	$4.15	$1.30	$2.82	$2.61	$4.07	$2.15	-
	NET	-	-	$1.30	-	$3.87	$4.35	$3.31	-
	TWL	-	-	-	-	$4.68	$2.97	$8.00	$3.09
Bluefin tuna	HND	-	-	-	-	$14.70	$3.30	$10.73	$7.93
	PLL	5.83	$5.94	$4.62	$4.43	$6.12	$6.90	$5.56	$6.64
	NET	-	-	-	-	$15.71	-	-	-
	P. Seine	-	-	-	-	-	-	$11.05	$7.36
Yellowfin tuna	HND	-	$2.24	$1.55	$1.33	$2.49	$1.50	$2.50	$1.09
	PLL	-	$2.99	$1.63	$2.04	$2.51	$2.02	$2.14	$2.29
	BLL	-	$2.88	$1.41	$2.30	$3.28	$1.42	$2.03	$0.48
	NET	-	-	$1.07	$0.82	$2.03	$1.01	$2.43	$0.47
	TWL	-	-	-	-	$2.40	$1.49	$2.67	$2.08
Other tunas	HND	$0.28	$0.85	$0.75	$0.63	$1.34	$0.84	$1.90	$1.33
	PLL	-	$0.73	$0.79	$1.38	$1.84	$1.49	$0.98	$0.56
	BLL	-	$0.63	$0.87	$1.33	-	$0.78	$1.50	-
	NET	$0.38	$0.31	$0.35	$0.18	$0.45	$0.51	$0.73	$0.19
	TWL	-	$0.66	$0.31	$0.53	$0.45	$0.62	$1.08	$0.35
	P. Seine	-	$0.49	-	$0.10	-	-	-	-
Swordfish	HND	-	$3.02	$2.48	$2.86	$3.61	$2.94	$5.20	-
	PLL	-	$3.19	$2.88	$3.07	$4.31	$3.32	$4.01	$3.10
	BLL	-	$3.09	$2.46	$3.19	$4.88	$3.54	$3.07	-

Species	Gear	Gulf of Mexico		S. Atlantic		Mid-Atlantic			
		1996	1999	1996	1999	1996	1999	1996	
	NET	-	-	-	-	$4.63	$3.58	$5.62	-
	TWL	-	-	-	-	$4.56	$3.09	$3.08	$3.54
Large Coastal Sharks	HND	$0.23	$0.60	$0.72	$0.62	$0.74	$0.90	-	$0.70
	PLL	-	$0.74	$1.54	$1.24	$0.58	$0.74	$1.03	-
	BLL	$0.60	$0.52	$0.73	$1.06	$0.54	$0.53	$0.99	$0.97
	NET	$0.38	$0.39	$1.30	$1.60	$0.45	$0.43	$0.83	$0.60
	TWL	$0.15	$0.46	$0.86	$0.63	$0.47	$0.46	$0.80	$0.94
Pelagic sharks	HND	-	$1.27	$0.82	$0.89	$1.47	$1.61	$1.60	-
	PLL	-	$1.19	$0.68	$0.98	$1.25	$1.31	$1.26	$3.10
	BLL	-	$1.34	$0.59	$0.84	$1.47	$0.98	$1.85	$0.84
	NET	-	-	$0.33	$0.26	$0.99	$0.93	$1.12	$0.66
	TWL	-	-	-	$0.20	$1.00	$1.03	$0.96	$0.72
Small Coastal sharks	HND	-	$0.55	$0.25	$0.37	-	$0.43	-	-
	PLL	-	$0.47	-	$0.54	$0.25	-	-	-
	BLL	-	$0.49	-	$0.54	-	-	-	-
	NET	-	$0.63	$0.25	$0.49	-	$0.42	-	-
	TWL	-	-	-	$0.49	-	$0.50	-	-
Shark fins	HND	-	$8.00	$14.00	$5.31	$2.74	$3.38	-	-
	PLL	-	$13.18	-	$10.51	$7.79	$3.15	$4.25	-
	BLL	-	$13.48	$14.00	$14.81	$8.00	-	$3.00	$0.31
	NET	-	$7.31	-	$4.88	$4.77	$3.72	$1.96	$2.62
	TWL	-	-	$9.11	$6.21	$1.99	$2.60	$2.32	$0.46

Table 5.5 **Average ex-vessel prices per lb. for Atlantic HMS by area. 1999 dollars are converted to 1996 dollars using the consumer price index conversion factor of 0.94.**

Species	Gulf of Mexico		S. Atlantic		Mid-Atlantic		N. Atlantic	
	1996	1999	1996	1999	1996	1999	1996	1999
Bigeye tuna	$0.68	$3.18	$1.32	$2.60	$3.99	$3.31	$3.59	$3.10
Bluefin tuna	$5.83	$5.94	$4.62	$4.42	$9.48	$5.55	$10.78	$7.76
Yellowfin tuna	-	$2.76	$1.56	$1.66	$2.43	$1.51	$2.35	$1.43
Other tunas	$0.29	$0.81	$0.62	$0.57	$1.10	$0.75	$1.31	$0.48
Swordfish	-	$3.15	$2.79	$3.07	$4.43	$3.26	$4.09	$3.24
Large coastal sharks	$0.21	$0.53	$1.02	$1.03	$0.55	$0.55	$0.88	$0.72
Pelagic sharks	-	$1.28	$0.62	$0.78	$1.21	$1.16	$1.31	$0.76
Small coastal sharks	-	$0.52	$0.25	$0.47	$0.25	$0.44	-	-
Shark fins	-	$13.17	$10.74	$10.43	$4.60	$3.21	$2.69	$1.12

Table 5.6 **Indices of ex-vessel prices for HMS, except sharks, by years 1993-1999.** 1982 is the base year and has a value of 100. 1996 and 1999 are in bold for easier referencing. Note: Indices based on Atlantic and Pacific ex-vessel prices. Source: NMFS, 2000a.

Year	Swordfish	Albacore	Bluefin	Skipjack	Yellowfin	
1993	92	132	766	85	112	117
1994	107	125	666	127	205	181
1995	104	120	954	83	283	212
1996	**103**	**130**	**229**	**82**	**113**	**105**
1997	91	124	353	93	126	118
1998	70	99	295	79	100	96
1999	**76**	**125**	**736**	**63**	**88**	**94**

Table 5.7 **Estimates of the total ex-vessel value of Atlantic HMS fisheries.** Note: Average ex-vessel prices are the average of the values noted in Table 5.5 and may have some weighting errors, except for bluefin tuna which is based on a fleet-wide average. Sources: NMFS, 1997b; NMFS, 2000b; Cortes, 2000, and bluefin tuna dealer reports from the Northeast Regional Office.

Species	1996			1999		
	Ex-vessel price ($/lb dw)	Weight (lb dw)	Fishery Value	Ex-vessel price ($/lb dw)	Weight (lb dw)	Fishery Value
Bigeye tuna	$2.40	1,212,706	$2,904,432	$3.05	1,664,385	$5,072,213
Bluefin tuna	$10.58	1,652,989	$17,488,624	$7.65	1,926,442	$14,737,281
Yellowfin tuna	$2.11	6,679,938	$14,116,936	$1.84	6,351,717	$11,687,160
Other tunas	$0.83	368,433	$305,799	$0.65	495,241	$323,145
Total tuna	--	--	$34,815,791	--	--	$31,819,798
Swordfish	$3.77	7,170,619	$27,033,234	$3.18	5,942,839	$18,898,228
Large coastal sharks	$0.67	5,262,314	$3,499,439	$0.71	3,919,570	$2,773,096
Pelagic sharks	$1.05	695,531	$727,989	$1.00	400,821	$398,817
Small coastal sharks	$0.25	460,667	$115,167	$0.48	672,245	$320,437
Shark fins (weight = 5% of all sharks landed)	$6.01	320,926	$1,928,763	$6.98	249,632	$1,743,054
Total sharks	--	--	$6,271,358	--	--	$5,235,403
Total HMS	--	--	$68,120,382	--	--	$55,953,430

5.1.3 Wholesale Prices of Atlantic HMS

Currently, NMFS does not collect wholesale price information from dealers. However, the wholesale price of some fish species is available off the web (www.st.nmfs.gov/st1/market_news/index.html). The wholesale prices presented in Tables 5.8 through 5.11 are from the annual reports of the Fulton Fish Market. As with ex-vessel prices, wholesale prices depend on a number of factors including the quality of the fish (e.g., freshness, fat content, method of storage), the weight of the fish, the supply of fish, and consumer demand.

Tables 5.8 through 5.11 indicate that the average wholesale price of all HMS sold in Atlantic and Gulf of Mexico states decreased by approximately 19 percent from 1996 to 1999.

The wholesale price of swordfish weighing between 26 and 49 lbs decreased the most (42.5 percent), followed by the wholesale price of swordfish weighing between 50 and 99 lbs (29.1 percent) and the wholesale price of swordfish weighing over 100 lbs (21.3 percent). The wholesale price of blacktip and mako sharks decreased the least (6.7 and 6.9 percent, respectively). These tables also indicate that of all HMS, sharks appear to be worth the least in terms of wholesale prices while yellowfin tuna is worth the most. Additionally, swordfish and tunas that are cut into pieces are generally worth more than a whole fish, although the larger fish are generally worth more than smaller fish.

Table 5.8 **Average fresh wholesale price per lb of sharks sold in Atlantic and Gulf of Mexico states as reported by the Fulton Fish Market**. Note: 1999 dollars are converted to 1996 dollars using the conversion factor 0.94.

State	Species	Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
FL	Blacktip	96	0.00	1.00	0.00	1.25	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	1.18	0.00	1.41	0.00	0.00	0.73	0.88	0.00	0.00	0.00	0.00	0.00
	Mako	96	0.00	2.50	0.00	0.00	3.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	3.29	0.00	1.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Thresher	96	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
NC	Blacktip	96	1.13	1.07	1.01	1.25	1.14	0.89	0.72	1.06	0.00	0.00	1.05	0.00
		99	0.98	0.81	1.16	0.92	0.00	1.18	0.81	0.00	0.94	0.80	0.00	0.00
	Mako	96	0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Thresher	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NY	Blacktip	96	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
VA	Blacktip	96	0.00	1.01	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	1.18	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Mako	96	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Thresher	96	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	0.00

Table 5.9 **Average fresh wholesale price per lb of swordfish sold in Atlantic and Gulf of Mexico states as reported by the Fulton Fish Market**. Note: 1999 dollars are converted to 1996 dollars using the conversion factor 0.94.

State	Size	Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
FL	100# Up	96	0.00	6.58	6.25	6.80	6.38	6.58	7.13	6.17	6.00	0.00	6.50	0.00
		99	4.35	4.51	5.64	4.88	4.23	4.70	4.23	4.23	0.00	0.00	4.54	4.59
	50-99#	96	0.00	0.00	6.25	7.00	5.63	6.38	6.75	0.00	5.50	0.00	6.00	0.00
		99	3.81	3.95	4.94	4.41	4.00	4.23	0.00	0.00	0.00	0.00	4.00	3.95
	26-49#	96	0.00	0.00	5.75	6.00	6.00	6.00	6.00	0.00	0.00	0.00	5.50	0.00
		99	2.35	2.88	3.60	4.23	0.00	0.00	0.00	0.00	0.00	0.00	3.29	2.59
	Cuts	96	0.00	7.38	7.50	8.17	7.88	8.00	8.50	8.50	7.50	0.00	8.75	0.00
		99	5.35	6.34	7.05	5.93	5.64	5.64	5.64	5.40	0.00	0.00	5.95	5.48
LA	100# Up	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	5.17	0.00	0.00	0.00	4.70	0.00	0.00	0.00	0.00	4.70
	50-99#	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.29
	26-49#	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Cuts	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	6.58	0.00	0.00	0.00	6.11	0.00	0.00	0.00	0.00	5.64
MA	100# Up	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.25	0.00	0.00	5.50	0.00
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.41	0.00	0.00	0.00
	50-99#	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.75	0.00	0.00	0.00	0.00
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.82	0.00	0.00	0.00
	26-49#	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88	0.00	0.00	0.00
	Cuts	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.50	0.00	0.00	7.00	0.00
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.64	0.00	0.00	0.00
NC	100# Up	96	0.00	5.75	0.00	6.63	6.25	0.00	0.00	0.00	0.00	6.13	5.25	5.65
		99	0.00	5.17	4.70	4.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	50-99#	96	0.00	5.13	0.00	7.50	6.38	0.00	0.00	0.00	0.00	5.63	4.75	5.30
		99	0.00	4.23	0.00	4.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	26-49#	96	0.00	5.25	0.00	7.25	5.75	0.00	0.00	0.00	0.00	5.13	4.00	4.75

State	Size	Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Cuts	96	0.00	6.88	0.00	8.13	7.50	0.00	0.00	0.00	0.00	7.13	7.13	6.50
		99	0.00	0.00	5.88	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NJ	100# Up	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	6.11	5.64	0.00	0.00	0.00	0.00	6.00
	50-99#	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	5.64	5.29	0.00	0.00	0.00	0.00	4.35
	26-49#	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	0.00	4.23	0.00	0.00	0.00	0.00	0.00
	Cuts	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	7.05	6.34	0.00	0.00	0.00	0.00	7.28
NY	100# Up	96	0.00	0.00	0.00	0.00	0.00	0.00	7.38	6.50	6.00	6.38	6.00	0.00
		99	0.00	0.00	0.00	0.00	0.00	5.17	5.06	4.23	6.34	5.17	0.00	0.00
	50-99#	96	0.00	0.00	0.00	0.00	0.00	0.00	7.50	0.00	5.63	5.63	5.75	0.00
		99	0.00	0.00	0.00	0.00	0.00	4.70	4.59	3.29	5.17	4.70	4.00	0.00
	26-49#	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.75	5.13	5.25	0.00
		99	0.00	0.00	0.00	0.00	0.00	3.29	0.00	3.29	3.29	3.29	2.82	0.00
	Cuts	96	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	7.50	7.50	7.50	0.00
		99	0.00	0.00	0.00	0.00	0.00	6.11	6.34	0.00	7.99	6.11	0.00	0.00

Table 5.10 **Average fresh wholesale price per lb of bigeye tuna (B) and yellowfin tuna (Y) sold in Atlantic and Gulf of Mexico states as reported by the Fulton Fish Market**. Note: 1999 dollars are converted to 1996 dollars using the conversion factor 0.94. #'s indicate quality (1 is highest, 3 is lowest). BTF is by the fish.

State	Species and Size	Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
FL	Y#2BTF	96	0.00	5.50	4.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	4.37	4.07	0.00	3.76	4.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Y#2cut	96	0.00	7.50	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	6.58	5.56	0.00	5.88	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Y#3BTF	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	2.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Y#3cut	96	-	-	-	-	-	-	-	-	-	-	-	-

State	Species and Size	Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
		99	0.00	4.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LA	Y#1BTF	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	6.11	7.05	0.00	0.00	0.00	4.46	0.00	5.40	0.00	6.58	0.00
	Y#1cut	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	8.46	0.00	0.00	0.00	0.00	6.27	0.00	7.52	0.00	9.40	0.00
	Y#2BTF	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.75	0.00	0.00	5.00
		99	0.00	0.00	0.00	4.46	3.18	3.72	3.16	4.46	3.65	4.70	4.23	0.00
	Y#2cut	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	7.00
		99	0.00	0.00	0.00	6.58	5.17	5.56	4.83	6.11	5.40	6.58	6.11	0.00
NC	Y#2BTF	96	0.00	4.75	0.00	6.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Y#2cut	96	0.00	6.50	0.00	8.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Y20-30#BTF	96	2.08	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Y30-40#BTF	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Y40-50#BTF	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.75	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
NJ	Y#1BTF	96	0.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88	0.00	0.00	0.00	0.00
	Y#1cut	96	0.00	0.00	0.00	9.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Y#2BTF	96	0.00	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Y#2cut	96	0.00	0.00	0.00	7.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
NY	Y#1BTF	96	0.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76	0.00
	Y#1cut	96	0.00	0.00	0.00	9.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.05	0.00

State	Species and Size	Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
	Y#2BTF	96	4.75	4.75	0.00	5.50	0.00	4.13	4.63	3.83	3.63	3.58	3.38	0.00
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.88	0.00	0.00
	Y#2cut	96	0.00	7.00	0.00	7.50	0.00	5.88	6.38	5.60	5.56	5.25	5.13	0.00
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.64	5.76	0.00	0.00
	Y40-60#BTF	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50	0.00	2.50	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	B#1BTF	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76	0.00
	B#1cut	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	0.00
	B#2BTF	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76	4.23	0.00
	B#2cut	96	-	-	-	-	-	-	-	-	-	-	-	-
		99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17	6.11	0.00
TX	Y#2BTF	96	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Y#2cut	96	0.00	0.00	0.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Y40-60#BTF	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-
	Y60-80#BTF	96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.75	0.00	0.00	0.00	0.00
		99	-	-	-	-	-	-	-	-	-	-	-	-

Table 5.11 **The overall average wholesale price per lb of fresh HMS sold in Atlantic and Gulf of Mexico states as reported by the Fulton Fish Market.** Note: 1999 dollars are converted to 1996 dollars using the conversion factor 0.94. #'s indicate quality (1 is highest, 3 is lowest); BTF is by the fish.

Species	Description	1996 Price/lb	1999 Price/lb	Percent Change
Blacktip	--	$1.05	$0.98	-6.7%
Mako	--	$2.77	$2.58	-6.9%
Thresher	--	$1.00	$0.86	-14%
Swordfish	100# and up	$6.28	$4.94	-21.3%
	50-99#	$6.02	$4.27	-29.1%
	26-49#	$5.50	$3.16	-42.5%
	Cuts	$7.74	$6.16	-20.4%
Yellowfin tuna	#1: BTF	$7.00	$5.61	-19.9%
	#1: Cuts	$9.38	$7.74	-17.5%
	#2: BTF	$5.00	$3.99	-20.2%
	#2: Cuts	$6.52	$5.85	-10.3%
	#3: BTF	--	$2.82	--
	#3: Cuts	--	$4.23	--
Bigeye tuna	#1: BTF	--	$3.76	--
	#1: Cuts	--	$5.17	--
	#2: BTF	--	$4.00	--
	#2: Cuts	--	$5.64	--

5.1.4 Fishing Costs and Revenues for Atlantic Commercial Fishermen

There are little additional data or new reports regarding fishing costs and revenues. Unless otherwise stated, the information included here is a summary of the information included in the SAFE report for 2000 and the HMS FMP.

In general, a vessel owner will need to pay for a number of supplies for each fishing trip (e.g. hooks, bait, lightsticks, ice, fuel, groceries, etc.), for vessel and gear repairs as needed, for crew members (the number of crew members may change depending on the type of fishing trip

and the gear used), and for the proper permits (the information here does not include the price of the permit which is small for an annual renewal but may be large for someone trying to enter a limited access fishery). Fishing trips themselves can be prohibitively expensive and there is no guarantee that the revenues from the harvest will be enough to cover the owner's expenses for that trip.

Pelagic longline

Although this is the main gear type of commercial HMS fisheries, the only economic information currently collected for this gear type is done on a per trip basis through submission of voluntary forms in the pelagic logbook maintained in the Southeast Fisheries Science Center. Compared to the number of logbook reports, few economic data are collected (Table 5.12). NMFS may require this information in the future (64 FR 55900, October 15, 1999) in order to improve the economic data available for all HMS fisheries.

There are two studies that have examined this voluntary data, Larkin *et al*. (1998) and Ward and Hanson (1999). Both find that the characteristics of fishing trips vary widely and that distinct fleet sectors must be taken into account when managing this fishery. This is consistent with NMFS' view to manage fisheries holistically, not solely by species. Both reports also find that the cost of fuel and bait is 40 to 51 percent of the cost of the entire trip (Table 5.13). Hanson and Ward (1999) found that summing the total inputs into the trip arrived at an average variable cost per trip of $2,966 but that the total cost of the trip as reported on the trip summary form had an average of $5,284. This is closer to the average variable cost per trip ($7,331) estimated in Larkin *et al*. (1998).

Generally, fishermen in HMS fisheries do not have large profits. Larkin *et al*. (1998) found that the average vessel earns approximately $35,907 per year in net revenues and that the captain of the vessel earns an average of $1,521 per trip, the vessel owner earns an average of $4,422 per trip, and the crew members each earn an average of $978 per trip. Ward and Hanson's results indicate that fifty percent of the fleet earns $10,000 or less annually and 20 percent of this part of the fleet actually has a negative profit each year. Ward and Hanson (1999) also found that almost 19 percent of the vessels in the fleet earned more than $50,000 annually and 7 percent earned more than $100,000 annually.

Table 5.12 Total Number of Logbook and Weigh-Out Observations. Source: Ward and Hanson, 1999.

	1996	**1997**	
Set Form	17,996	15,867	N/A
Weigh-Out Form	21,976	21,792	N/A
Trip Summary	1,310	624	383 (incomplete)

Table 5.13 The average variable cost per pelagic longline trip.

Cost Category	Average cost for 1996: Larkin *et al.* (1998)	Percent of total costs	Average cost for 1996-1997: Ward and Hanson (1999)	Percent of total costs
Light sticks	$801	10.9%	$302	10.2%
Fuel	$1,400	19.1%	$876	29.5%
Bait	$1,506	20.5%	$646	21.8%
Ice	$384	5.2%	$350	11.8%
Groceries	$617	8.4%	$441	14.9%
Miscellaneous	$2,623	35.8%	--	--
Freight/handling	--	--	$350	11.8%
Total	$7,331		$2,965	

Bottom Longline

This gear is mainly used to target sharks. The fishing costs for this gear type should be similar to the fishing costs for pelagic longline. McHugh and Murray (1997) found that a seven day trip had an average profit (owner's share of catch minus all expenses) of $1,589. Vessels between 40 and 49 feet had an average profit of $1,975 for a seven day trip. According to Larkin *et al*. (1998), pelagic longline vessels that were between 30 and 49 feet had total returns for a trip (payments to owner and captain) between $2,271 and $3,462 for an average annual net revenue of $34,000 to $51,000.

Purse Seine

In June 2000, NMFS sent out a voluntary economic survey to the owners of the five Atlantic tuna purse seine vessels. The purpose of the survey is to collect up-to-date information regarding the seasonal and/or yearly costs incurred by the purse seine fleet. Accurate cost information will be particularly useful when addressing the impact of regulations on Atlantic tuna fishery participants, including purse seiners, to ensure that the agency conducts adequate analyses as required under various legal mandates. NMFS is still in the process of collecting and compiling the information from the purse seine fleet, and hopes to have preliminary results available during 2001.

Handgear

The commercial handgear fishery targets mainly tunas, particularly bluefin tuna. For this reason, most of the economic information regarding this fishery is related to bluefin tuna. In

1999, researchers at the University of Rhode Island finalized a project that: 1) evaluated the influence of factors such as quantity supplied, time of harvest, and quality characteristics on the price of U.S. Atlantic bluefin tuna sold on the Japanese wholesale market; 2) determined the relationship between prices in Japan and ex-vessel prices received by U.S. fishermen, and 3) determined how different fishery management options influence gross revenues received by U.S. fishermen. The final report concluded that regulations should be developed and implemented that would help the fishery avoid capture seasons that are condensed into sporadic intervals. The report also recommended that consumer preferences should be considered for the efficient exploitation and trade of bluefin tuna in order to help increase revenues for the industry and to eliminate economic inefficiencies generated by public management. Specifically, the report suggests a more dispersed allocation of harvest planned in conjunction with periods of the year when fish seem to possess consumer-favored characteristics, such as high fat content. The researchers at the University of Rhode Island have continued their work, and are in the process of publishing an additional peer-reviewed paper with three objectives: 1) to formally evaluate, using a hedonic model, the degree to which price of U.S. fresh bluefin tuna is determined by those quality attributes of each fish, rather than by just the quantity supplied; 2) to attempt to show how the quality of U.S. bluefin tuna depends on harvest practices; and 3) to combine the results from the hedonic model and production model estimates to find quota allocations that could result in the highest payoffs to the industry.

Gillnets

In 1999, the use of pelagic driftnets was prohibited in both the swordfish and Atlantic tunas fisheries. Currently the only fishermen allowed to use this gear are fishermen targeting sharks. Only a few vessels are known to fish with this type of gear. NMFS currently has very little economic information on the fishing costs related to this gear type. However, it is expected that the fishing costs per trip would be less than those of a pelagic or bottom longline fishing trip because the trips are usually shorter (an average of 18 hours per trip), vessels do not fish far offshore (within 30 nautical miles from port), and the gear does not need hooks, bait, or lightsticks. Other costs may be incurred as the holes in the gear will need to be repaired regularly.

5.1.5 Costs and Revenues for Atlantic Dealers

NMFS does not currently have information regarding the costs to HMS dealers. In general, dealer costs include: paying the vessel owner/captain for fish; paying employees to process the fish; rent or mortgage on the appropriate building; and supplies to process the fish. Some dealers may provide loans to the vessel owner money for vessel repairs, fuel, ice, bait, etc. In general, fishing costs and revenues of dealers are not as variable or unpredictable as those of a vessel owner; however, dealer costs may fluctuate depending upon supply of fish, labor costs and equipment repair.

Although NMFS does not have specifics regarding HMS dealers, there is some

information on the number of employees for processors and wholesalers in the United States provided in the HMS FMP (Section 2.2.4). Table 5.14 provides a summary of available information. Recent trends indicate that while the number of plants have decreased, the number of employees have increased. Florida and Massachusetts appear to have the largest number of plants and employees on the Atlantic coast.

NMFS also has information regarding the percent mark-up paid by consumers. A mark-up or margin is the difference between the price paid for the product by the consumer and the wholesale or dockside value for an equivalent weight of the product. This information is presented in Table 5.15. In both 1996 and 1999, the mark up was over 90 percent and the mark-up decreased slightly (3.2 percent) in 1999 compared to 1996.

Table 5.14 The number of plants and employees for Atlantic processors and wholesalers , by State, in 1996 and 1998. Source: NMFS, 1998; NMFS, 2000a. 1999 data is not yet available.

State	1996		1998	
	Number of plants	Number of employees	Number of plants	Number of employees
Maine	267	3,353	278	3,328
New Hampshire	37	455	36	561
Massachusetts	374	4,964	391	5,117
Rhode Island	82	793	78	758
Connecticut	44	339	41	372
New York	339	2,622	358	2,617
New Jersey	150	2,090	153	2,098
Pennsylvania	68	2,017	70	2,680
Delaware	-	-	-	-
District of Columbia	7	73	6	101
Maryland	126	1,889	119	1,699
Virginia	129	2,115	122	2,240
N. Carolina	145	2,064	144	2,222
S. Carolina	37	337	33	276
Georgia	66	1,649	66	1,845
Florida	504	5,794	482	6,126

State	1996		1998	
	Number of plants	Number of employees	Number of plants	Number of employees
Alabama	144	2,425	137	2,147
Mississippi	64	1,142	71	2,799
Louisiana	311	4,280	288	3,939
Texas	136	2,384	141	2,854
Total	3,030	40,785	3,014	43,779

Table 5.15 **Summary of the mark-up and consumer expenditure for the primary wholesale and processing of domestic commercial marine fishery products: 1996 and 1999.** Source: NMFS, 1997a and NMFS, 2000a.

	1996	
Purchase of Fishery inputs	$5,377,442	$6,238,465
Percent mark-up of fishery inputs	96.6%	93.5%
Total mark-up	$5,192,619	$5,834,232
Total value of fishery inputs	$10,570,061	$12,072,698

5.2 Recreational Fisheries

5.2.1 Economics of Recreational Fisheries across the United States in General[2]

Although NMFS believes that recreational fisheries have a large influence on the economies of coastal communities, NMFS does not have a lot of current information on the costs and expenditures of anglers or the businesses that rely on them. An economic survey done by the U.S. Fish and Wildlife Service[3] in 1996 found that 9.4 million saltwater anglers went on approximately 87 million fishing trips and spent approximately $8.1 billion (USFWS ,1997). Expenditures included lodging, transportation to and from the coastal community, vessel fees, equipment rental, bait, auxiliary purchases (e.g. binoculars, cameras, film, foul weather clothing, etc.), and fishing licenses (USFWS, 1997). Saltwater anglers spent $4.6 billion on trip related costs and $3.4 billion on equipment (USFWS, 1997). Approximately 76 percent of the saltwater anglers surveyed fished in their home state (USFWS, 1997). The next USFWS survey will be conducted in 2001.

The American Sportfish Association (ASA) also has a report listing the 1996 economic impact of sportfishing on specific states. This report states that all sportfishing has an overall economic importance of $108.4 billion dollars (ASA, 1997). Texas, Florida, New York, North Carolina, and Georgia are among the top ten states in terms of overall economic impact for both saltwater and freshwater fishing (ASA, 1997). Florida is also one of the top states in terms of economic impact of saltwater fishing with $2.2 billion in angler expenditures, $4.4 billion in overall economic impact, $1.2 billion in salaries and wages related to fishing, and 56,278 fishing related jobs (ASA, 1997). Texas followed Florida with $0.9 billion in angler expenditures, $2.0 billion in overall economic impact, $0.5 billion in salaries and wages, and 24,802 jobs (ASA, 1997). New Jersey and North Carolina were the next highest states in terms of economic impact (ASA, 1997).

In general, most anglers did not target HMS in 1996 or 1999. In 1996, over 8 million people made 64 million recreational fishing trips in the United States and caught over 313 million fish (over 50 percent were released alive). In the Atlantic and Gulf of Mexico alone, 8.8 marine recreational fishing participants took 56 million trips and caught a total of 280 million fish. The most commonly caught species overall were spotted seatrout, summer flounder, Atlantic croaker, black sea bass, bluefish, and striped bass. Thirteen percent of the total recreational harvest came from the Atlantic and Gulf of Mexico EEZ. The most common caught species caught in federal managed waters were black sea bass, Atlantic mackerel, dolphin, red snapper, and bluefish.

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[2] Unless stated otherwise, all the information and data presented in this section is from NMFS 1997a and NMFS 2000a.

[3] This survey interviewed 22,578 anglers

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In 1999, over 7.8 million people made recreational fishing trips in the United States and caught over 328.8 million fish (over 59 percent were released alive). Along the Atlantic and Gulf of Mexico, 6.1 million participants took 50.9 million trips and caught a total of 308.4 million fish. Of the trips that occurred in the Atlantic, 23 percent were made in east Florida, 14 percent in New Jersey, and 13 percent in North Carolina. The most commonly caught species in the Atlantic were Atlantic croaker, summer flounder, striped bass, bluefish, and black sea bass. The most commonly caught species in federally managed waters were black sea bass, Atlantic croaker, summer flounder, dolphin, and Atlantic mackerel. Of the trips that occurred in the Gulf of Mexico, 71 percent were made in west Florida and 17 percent in Louisiana. The most commonly caught species were spotted and sand seatrouts, red drum, white grunt, Atlantic croaker, and red and gray snappers. The most commonly caught species in federally managed waters were red snapper, white grunt, dolphin, black sea bass, and spotted seatrout.

5.2.2 Willingness to Pay to Fish for Atlantic HMS

The most recent data NMFS has comes from a 1994 survey of anglers in New England and the Mid-Atlantic (Hicks *et al.*, 1999). The data collected were used to estimate expenditures and economic value of the various groups of recreational fisheries in this area. One category of fishing, called "Big Game" consisted primarily of HMS, including sharks, billfish, and tunas. Although this study is not an exhaustive picture of the entire HMS recreational fishery, the results provide considerable insight into the absolute and relative values of the recreational fisheries for HMS. Overall average willingness to pay (WTP) for a one-day fishing trip ranged from a low of less than a dollar in New Hampshire to a high of $42 in Virginia. Aggregate WTP (average WTP times the number of trips) ranged from $18 thousand in New Hampshire to nearly $1 million in Virginia. Using model results, it was possible to estimate the WTP for a one fish increase in the expected catch rate across all sites in the choice set. The highest average value was attributed to big game fish, ranging from $5 to $7 per trip (about $5.40 on average), in addition to the value of the trip. The marginal value of an increase in catch per trip was highest for big game fish, and lowest for bottom fish.

The 1994 survey results also indicated that boat fees were responsible for the greatest percentage of expenditures. Roughly 70% and 53% of total expenditures went for private/rental boats and charter/party boats, respectively. Travel expenses were the smallest portion of expenditures, although travel costs for those fishing on party/charter vessels were about twice as high as for those fishing on private/rental boats ($28 *vs*. $16).

Angler WTP depends, in part, on the species sought and on the location. Ditton *et al*. (1998) found that the WTP for bluefin tuna in North Carolina ranged from $344 to 388 per person. Fisher and Ditton (1992a) found that anglers were willing to pay an additional $105 per trip rather than stop fishing for sharks.

While these results are useful in considering the economic value of HMS recreational fisheries, specific surveys focusing on HMS are preferable in order to consider the particular

nature of these fisheries. NMFS will continue to pursue options for funding economic surveys of the recreational HMS fisheries.

5.2.3 Atlantic HMS Tournaments

The most recent economic information associated with HMS tournaments can be found in the HMS FMP and the Billfish Amendment. In general, HMS such as billfish and sharks are often targets of big game tournaments. These tournaments can charge large fees ($20 to $8,000) and award large prizes ($20 to more than $100,000; fishing equipment can also be awarded). In August 1997, the Pirate Cove Billfish Tournament awarded $217,000 to the participant who landed a 670 lb blue marlin. Tournaments can bring in a lot of money for the surrounding communities and local businesses. Fisher and Ditton (1992b) found that the average angler who attended a billfish tournament spent $2,147 per trip and that billfish tournament anglers spent an estimated $180 million in 1989. Ditton and Clark (1994) estimated that the total annual net economic benefits of billfish tournaments in Puerto Rico was $18 million.

5.2.4 Atlantic HMS Charter and Party boat Operations

Currently, specific information on the economic impact of HMS charter/headboat operations is sparse. Most of the data, as reported in the HMS FMP, are related to the bluefin tuna fishery and other tunas. There are, however, limited data on charter/headboats in general. In 1998, a survey was completed of a number of charterboats (96 of an estimated 430) and party boats (21 out of 23) throughout Alabama, Mississippi, Louisiana, and Texas (Sutton *et al*., 1999). This study provides some economic information related to HMS. They defined charter boats as for-hire vessels that carry six or fewer passengers in addition to the crew while party boats are for-hire vessels that carry more than six passengers (up to 150 passengers). They found that the average charter boat base fees were $417 for a half day trip, $762 for a full day trip, and $1,993 for an overnight trip and 60 percent of all trips were taken May through August. The average party boat base fee were $41 for a half day trip, $64 for a full day trip, and $200 for an overnight trip and 48 percent were taken May through August. They found that 55 percent of charter boat operators reported targeting tuna at least once, 38 percent targeted sharks at least once, 41 percent reported targeting billfish at least once. Percentages by state are summarized in Table 5.16. Snapper (49 percent), king mackerel (10 percent) red drum (6 percent), cobia (6 percent), tuna (5 percent) and speckled trout (5 percent) were the species that received the largest percentage of effort by charter boat operators.

In the Sutton *et al*. study, party boat operators did not frequently target sharks, tunas or billfish. A total of 65 percent of party boat operators reported targeting sharks at least once; 55 percent indicated they had targeted tunas at least one time. Ninety percent reported that they did not target billfish. Snapper (70 percent), king mackerel (12 percent), amberjack (5 percent) and sharks (5 percent) were the species that received the largest percentage of effort by party boat operators. The economic information estimated in this study can be found in Table 5.17.

Holland *et al*. (1999) conducted a similar study on charter (boats that carry six or less passengers and charge for the entire boat) and headboats (boats that carry 10 or more passengers and charge by the person) in Florida, Georgia, South Carolina, and North Carolina. The survey interviewed 403 charter operators (24 percent of the known number of charter boats) and 52 head boat operators (35 percent of the known number of headboats). The average fees for charter and headboats are listed in Table 5.18. Charterboats and headboat operators are not targeting HMS as much as other species such as mackerel, grouper, snapper, dolphin, red drum. The percent charter and headboat operators report targeting HMS can be found in Table 5.19. Table 5.20 shows the economic information regarding these businesses. Unlike similar businesses in the Gulf of Mexico, these businesses appear to be profitable except for charter boats in Florida which are, on average, unprofitable.

Overall, charter/headboats appear to provide a substantial amount of employment and are economically important. Although HMS are targeted, they do not appear to be the primary objective for the majority of operations, and as such, HMS charter/headboat fisheries probably do not contribute as substantially to the economies of these communities compared to other fisheries such as mackerel and snapper.

Table 5.16 The percent of charter boat operators in Alabama, Louisiana, Mississippi, and Texas who reported targeting HMS at least once. Source: Sutton *et al*., 1999.

Target		Alabama	Louisiana	Mississippi	
Tuna	Yes	61.9	66.7	6.3	65.2
	No	38.1	33.3	93.8	32.6
	Incidental	0.0	0.0	0.0	2.2
Sharks	Yes	4.5	16.7	75.0	67.4
	No	95.5	66.7	18.8	42.7
	Incidental	0.0	16.7	6.3	32.6
Billfish	Yes	61.9	41.7	6.3	43.5
	No	38.1	58.3	93.8	56.5
	Incidental	0.0	0.0	0.0	0.0

Table 5.17. The financial operations and economic impact of charter and party boat operators in Alabama, Louisiana, Mississippi, and Texas. Source: Sutton *et al*., 1999.

		Charter boats	
Average capital investment	Hull and superstructure	$97,713	$214,922
	Engine	$9,058	$2,571
	Electronics	$5,231	$7,429
	Other equipment and tackle	$7,298	$6,686
Annual costs	Wages and Salaries	$19,725	$64,064
	New hull or superstructure	$18,300	$23,076
	Maintenance and repair	$8,584	$26,919
	Engine	$4,890	$15,153
	Insurance	$3,799	$11,491
	Other costs	$6,020	$28,404
Average annual gross revenues		$68,934	$137,308
Average annual net revenues (includes capital expenses - e.g. purchase of new hull)		-$12,099	-$128,703
Average annual operating profit (does not include capital expenses - e.g. purchase of new hull)		$14,650	-$73,064
Economic output	Alabama	$13.8 M	$0.8 M
	Mississippi	$6.6 M	-
	Louisiana	$4.4 M	-
	Texas	$17.6 M	$3.5 M
Employment generated	Alabama	$5.6 M (282 jobs)	$0.3 M (16 jobs)
	Mississippi	$2.1 M (211 jobs)	-
	Louisiana	$1.8 M (118 jobs)	-
	Texas	$6.1 M (385 jobs)	$1.7 M (77 jobs)

Table 5.18 The average fees for charter and headboats in Florida, Georgia, South Carolina, and North Carolina. Source: Holland *et al*., 1999.

State	Length of trip	Charter boat	Headboat
Florida	Half-day	$348	$29
	Full day	$554	$45
	Overnight	$1,349	--
Georgia	Half-day	$320	--
	Full day	$562	--
	Overnight	$1000-$2000	--
South Carolina	Half-day	$296	$34
	Full day	$661	$61
	Overnight	$1000-$2000	--
North Carolina	Half-day	$292	$34
	Full day	$701	$61
	Overnight	$1000-$2000	--

Table 5.19 The percent of charter and headboat operators in Florida, Georgia, South Carolina, and North Carolina who reported targeting HMS at least once. Source: Holland *et al*., 1999.

Target species	Florida		Georgia		S. Carolina			
	Charter	Head	Charter	Head	Charter	Head	Charter	
Tuna	8.5	0.0	8.3	-	0.0	-	60.0	-
Sharks	22.6	9.7	33.3	-	35.0	-	23.3	-
Billfish	9.9	0.0	8.3	-	20.0	-	40.0	-

Table 5.20. The financial operations and economic impact of charter and party boat operators in Florida, Georgia, South Carolina, and North Carolina. Source: Holland *et al*., 1999.

		Charter boats			
		Florida	**Other states**	**Florida**	
Average capital investment	Hull and superstructure	$90,989	$39,445	$214,158	$178,833
	Engine	$40,518	$5,900	$40,000	$38,181
	Electronics	$5,568	$5,900	$5,560	$6,277
	Other equipment and tackle	$5,878	$4,463	$9,183	$3,600
Annual costs	Wages and Salaries	$25,810	$17,928	$52,000	$33,077
	New hull or superstructure	$3,020	$793-1,340	$3,333	$0.00
	Maintenance and repair	$5,720	$4,991-6,910	$13,385	$16,577
	Engine	$6,334	$172-2,738	$9,450	$14,545
	Insurance	$2,970	--	$8,570	--
	Other costs	$24,723	$971-18,883	$48,999	$40,846
Average annual gross revenues		$56,264	$26,304-$60,135	$140,714	$123,000
Average annual net revenues (Gross revenues - Annual costs)		-$12,313	$3,069-13,237	$4,977	$17,955
Economic output		$128 M	$34.4 M	$23.4 M	$5.8 M
Employment generated		$31 M (3,074 jobs)	$15.6 M (1,066 jobs)	$5.8 M (450 jobs)	$2.2 (81 jobs)

5.3 Periodic Review Under Section 610 of the Regulatory Flexibility Act

5.3.1 Introduction

In 1996, the Small Business Regulatory Enforcement Fairness Act amended the Regulatory Flexibility Act (RFA). This amendment added section 610 to the RFA. Section 610 requires NMFS to periodically review rules that had or will have a significant economic impact on a substantial number of small entities. The purpose of this review is to determine whether significant rules should be continued without change or if they should be amended or rescinded in order to minimize the impact on small entities. The review should examine the impact of these rules consistent with the stated objectives of applicable statutes. NMFS has 10 years after the adoption of each rule in which to review the impact of the rule. Section 610 states that NMFS must consider the following factors in its review:

- the continued need for the rule;
- the nature of complaints or comments received concerning the rule from the public;
- the complexity of the rule;
- the extent to which the rule overlaps, duplicates or conflicts with other Federal rules, and to the extent feasible, with State and local governmental rules; and,
- the length of time since the rule has been evaluated or the degree to which technology, economic conditions, or other factors have changed in the area affected by the rule.

5.3.2 Description of Rules Implemented Since 1996 that have been Classified as Economically Significant

The review of each rule is facilitated when there is a baseline against which the rule may be evaluated. In this case, NMFS has decided to use 1996 as a baseline. NMFS believes that this baseline is appropriate because RFA was amended in 1996, the Magnuson-Stevens Act was amended in 1996, and regarding HMS specifically, no rules were implemented in 1996 that were classified as significant under RFA. A list of final regulations that were found significant under RFA or E.O. 12866[4] and were implemented since 1996 can be found in Table 5.21.

[4] NMFS is required to conduct economic analyses under E.O. 12866 as well as RFA. Unlike RFA, E.O. 12866 is concerned with economic impacts to the nation as a whole along with economic impacts on individual businesses.

Table 5.21. HMS regulations that were implemented after 1996 and were classified as significant under either RFA or E. O. 12866.

Rule	Date	FR cite	Action	Classification
1.	4/7/97	62 FR 16648	Atlantic shark fisheries; Quotas, bag limits, prohibitions, and requirements and large coastal shark species: Final rule that reduced large coastal shark quota and the recreational bag limits and prohibited 5 shark species	Not significant under RFA or E. O. 12866. On 05/20/98, NMFS announced availability of a document examining the economic impacts as requested by Judge Merryday. This document states that 1997 quotas may have a significant economic impact on a substantial number of small entities.
2.	1/27/99	64 FR 4055	Atlantic swordfish fishery; Management of driftnet gear: Final rule that prohibited the use of driftnet gear in the N. Atlantic swordfish fishery.	Will have a significant economic impact on a substantial number of small entities. Not significant under E. O. 12866.
3.	5/28/99	64 FR 29090	Atlantic highly migratory species fisheries; Fishery management plan, plan amendment, and consolidation of regulations: Final rule implementing the HMS FMP and Billfish Amendment 1.	Will have a significant economic impact on a substantial number of small entities. Significant under E. O. 12866.
4.	8/1/00	65 FR 47214	Atlantic highly migratory species; Pelagic longline management: Final rule that closed certain times and area to fishermen using pelagic longline gear and prohibited the use of live bait by fishermen using pelagic longline gear in the Gulf of Mexico.	Will have a significant economic impact on a substantial number of small entities. Not significant under E. O. 12866.
5.	10/13/00	65 FR 60889	Atlantic highly migratory species; Pelagic longline fishery; Sea turtle protection measures: Emergency rule that implemented a time/area closure in the Northeast Distant Sampling area and required fishermen using pelagic longline gear to carry and use dipnets and line clippers.	Exempt from RFA requirements. Significant under E. O. 12866.

Rule 1 in Table 5.21 reduced the LCS commercial quota by 50 percent, reduced the recreational bag limit for all shark species by 50 percent, established a commercial quota for SCS, prohibited the retention of five species of sharks, and prohibited the filleting of sharks at sea. The

intent of the rule was to reduce effective fishing mortality, stabilize the LCS population, facilitate enforcement, and improve management of the Atlantic shark. The economic analyses conducted for this rule concluded that because the shark fisheries are so diversified and because there were alternative fisheries for fishermen to enter, that the reduction in the commercial quota and recreational bag limit would not have a significant economic impact. Similarly, the analyses found that the prohibited species regulations were similar to status quo and the prohibition of filleting at sea would have minimal impacts on fishing costs. In May 1997, a number of commercial fishermen and dealers sued NMFS regarding the commercial quota in this regulation. In February 1998, the Court remanded the economic analyses to the agency. In May 1998, NMFS announced the availability of the new economic analyses for the commercial quota reduction implemented with this regulation. The new analyses found that nearly all shark fishery operators are active in other fisheries. Despite this, NMFS concluded that the quota cuts may have had a significant economic impact on a substantial number of small entities and that these impacts may put a number of fishermen out of business.

Rule 2 in Table 5.21 prohibited the use of driftnet gear in the North Atlantic swordfish fishery. The intent of this regulation was to reduce the bycatch of protected resources in a manner that maximizes the benefit to the Nation. The economic analyses for this rule found that the 17 fishermen who used this gear type could: 1) transfer fishing effort into the longline/harpoon category and continue fishing for swordfish; 2) fish for other species with other gears; 3) use driftnet for other HMS including Pacific species; and 4) exit the fishery. In general, the analyses found that the rule would have a significant economic impact on a substantial number of small entities.

Rule 3 in Table 5.21 changed a number of regulations and fishing operations in the Atlantic HMS fisheries including tunas, swordfish, sharks, and billfish. These changes included, but are not limited to, limited access for shark, swordfish, and tuna longline fishermen, a time/area closure for pelagic longline fishermen in the month of June, reduction in the bluefin tuna quota, establishing a recreational bag limit for yellowfin tuna, changing the shark commercial quota and recreational bag limit, and requiring VMS for all vessels with pelagic longline onboard. The intent of the regulations were to meet the new requirements of the Magnuson-Stevens Act, implement the recommendations of ICCAT, and consolidate the HMS regulations into one part of the Code of Federal Regulations. The specific regulations were intended to meet a number of objectives, including but not limited to: prevent or end overfishing of Atlantic tuna, swordfish, sharks, and billfish and adopt the precautionary approach to fishery management; rebuild overfished fisheries in as short a time as possible and control all components of fishing mortality to ensure the long-term sustainability of the stocks; minimize economic displacement during the transition from overfished fisheries to healthy ones; and, minimize bycatch of living marine resources and the mortality of such bycatch. The economic analyses conducted for these regulations found that even though HMS fishermen fish for other species in addition to HMS, including mackerel, snapper-grouper, reef fish, dolphin, and oilfish, overall the final actions will have a significant economic impact on fishermen and related industries such as processors and suppliers. Soon after the regulations were published in the Federal Register, a number of different fishing groups

and environmental sued NMFS on different aspects of the regulations and stated that the regulations were not consistent with RFA. Some of these lawsuits are still ongoing. Generally, the most recent economic data available only includes data for 1999. Thus, any impacts of the actual regulations, as opposed to the anticipation of the regulations, cannot be analyzed at this time, therefore the quanitifiable economic impacts of this rulemaking will not be discussed in this document.

Rule 4 in Table 5.21 prohibited fishing with pelagic longline in a number of different times and areas within the Atlantic EEZ and prohibited the use of live bait in the Gulf of Mexico. The intent of the regulation was to reduce bycatch and incidental catch of overfished and protected species by pelagic longline fishermen who target HMS. The economic analyses found there were 450 commercial fishermen, 125 dealers, and a number of recreational businesses that might be affected by these regulations; that the average annual gross revenues for commercial fishermen might decrease by about 5 percent; that 14 percent of the vessels could experience a 50 percent decrease in gross revenues; and, that a number of dealers may also experience a decrease in the average weight of fish handled of at least 5 percent. Overall, the regulation was found to have a significant economic impact on a substantial number of small entities. NMFS has also been sued on this regulation by three different organizations. Because this rule will not be fully implemented until February 2001 and because a full year's worth of data will not be available for any subsequent analyses until 2002, the actual economic impacts of this regulation are unknown and will not be discussed in this document.

Rule 5 in Table 5.21 implemented a time/area closure for pelagic longline gear in the Northeast Distant Statistical Area (NED) from October 10, 2000, until April 9, 2001 and requires all pelagic longline vessels to carry and use line clippers and dipnets. The intent of this regulation is to reduce bycatch and bycatch mortality of loggerhead and leatherback sea turtles by the Atlantic pelagic longline fishery. The economic analyses for this regulation found that the requirement of line clippers and dipnets would have minimal economic impacts; that closing the area could reduce gross revenues by 25 to 40 percent for the vessels fishing in the NED area assuming those vessels decide not to fish; and that while individual fishermen and processors are likely to be impacted, the fishery as a whole would not be because of the limited duration and scope of this rule. Because this rule was an emergency rule it was exempt from the economic analyses under RFA; however, it was found significant under E.O. 12866. Because a full year's worth of data will not be available for any subsequent analyses until 2002, the actual economic impacts of this regulation are unknown and will not be discussed in this document.

5.3.3 The Economic Impact of the Regulations

The actual economic impact of any specific regulation is difficult to quantify in any fishery because of changing factors that are not a result of the regulation such as changing consumer demand, weather patterns, and additional regulations in either that specific fishery or in related fisheries. For that reason, the actual impacts are not quantified but discussed qualitatively.

Rule 1 in Table 5.21 reduced the LCS commercial quota by 50 percent and reduced the recreational bag limit by 50 percent. Tables 5.5 and 5.7 indicate that in general from 1996 to 1999, the ex-vessel price of LCS and pelagic sharks stayed approximately the same, the SCS prices increased, and the fin prices decreased. This indicates that the commercial quota reduction may not have impacted the price of LCS meat, may have negatively impacted the price of shark fins, and may have positively impacted the price of SCS meat. This could be due, in part, to the reduction in a constant supply of shark fins available (after the quota reduction, the LCS fishery has generally closed within 2-3 months of the season opening) and the substitution of SCS meat during an LCS closure (the SCS fishery has not closed to date and landings in 1998 were higher than in 1997 although 1999 landings were lower). Wholesale prices of shark meat in general, have declined. While this reduction could be due to the reduction in LCS shark meat available, the wholesale price of pelagic sharks has also decreased indicating that factors other than the LCS quota reduction may be influencing the price. While the reduction in the recreational bag limit may have had some impact on the recreational fishery, the exact degree is hard to quantify given the paucity of economic data in relation to HMS. However, given the fact that most anglers do not target HMS in general, or sharks specifically, relative to the total salt water angler population, NMFS does not feel that the 1997 bag limit reduction had a significant impact on the recreational fishery.

Rule 2 in Table 5.21 prohibited the use of driftnet in the Atlantic swordfish fishery. The ex-vessel and wholesale prices of swordfish have declined since 1996. However, it is unlikely that the prohibition on driftnet gear caused this decline because few swordfish were landed using this gear type. Instead other factors, such as anticipation of the 1999 HMS FMP, the general decline in swordfish stocks between 1996 and 1999, overcapacity in the swordfish fishery, and the "Give swordfish a break" campaign may have influenced this price reduction.

Rules 3, 4, and 5 of Table 5.21 are too recent for NMFS to examine any economic impacts at this time.

5.3.4 Continued Need for the Regulations

In 1998, the results of the shark evaluation workshop (SEW) indicated that the quota and bag limit reduction for LCS in 1997 (Rule 1 in Table 5.21) did not reduce fishing mortality enough to rebuild LCS stocks. Based on these results, in 1999, NMFS implemented new regulations that would further reduce the commercial quotas and the recreational bag limits and add additional species to the prohibited species list. The new recreational bag limits and recreational prohibited species went into effect on July 1, 1999. Due to a court injunction, many of the 1999 commercial regulations, including the quotas, did not go into effect and the 1997 regulations remained in effect. A settlement agreement was approved by the Court on December 7, 2000. Emergency regulations, consistent with the settlement agreement, are currently being drafted. Thus, in 1999, NMFS felt that the regulations in this 1997 rule did not achieve its overall goal of sustaining the LCS shark stocks and that more restrictive measures were necessary, despite the potential for large economic costs in the short-term.

Rule 2 was effective in 1999 and emergency regulations prohibited this gear type for most of 1998. NMFS implemented these regulations because of concerns over the number of interactions with protected species. These concerns are still relevant today. As such, NMFS believes that these regulations are still needed.

Rules 3 through 5 in Table 5.21 are all regulations implemented within the last two years. At this time, NMFS believes these regulations are still necessary, although, in some cases it has not been long enough to assess the efficacy of the specific regulations in terms of achieving the objectives of the FMPs.

5.3.5 Comments Received on Each Rule

NMFS always invites comments on current and proposed regulations. Currently, most comments on existing regulations occur in the form of litigation. For instance, a number of different commercial shark fishermen and dealers sued NMFS regarding Rule 1 in Table 5.21. A commercial driftnet fisherman sued NMFS on a takings claim for Rule 2 in Table 5.21, seven different groups of plaintiffs composed of recreational, commercial, and environmental interest groups sued NMFS on different aspects of Rule 3 in Table 5.21[5], three different groups sued NMFS on Rule 4, and one group sued NMFS on Rule 5. Almost all of these lawsuits include claims that NMFS did not comply with RFA and on various National Standards. NMFS is working with lawyers, plaintiffs, and constituents to ensure that all concerns are considered.

In 2000, NMFS also received comments when commercial and recreational fishing groups took their concerns to Congress. Some of the bills that were introduced include: time/area closures similar to those in Rule 4 in Table 5.21 and a buy-back program for a number of vessels and permits; a bill to prohibit shark finning and monitor the trade of shark fins; and a bill to prohibit the use of spotter planes in the bluefin tuna fishery. Many of these bills originated because certain parties felt that NMFS had not done enough for the fishery, or that NMFS had done too much and did not consider all aspects of the fishery. In all cases, NMFS gave Congress comments on the proposed bills and continues to work with constituents to ensure all concerns are considered.

Outside of litigation and legislation, NMFS continues to receive comments on certain regulations and restrictions. NMFS is currently considering many of them; these are discussed in Section 10 of this document.

[5] These claims included, but are not limited to, the pelagic longline VMS requirement, shark commercial quotas, shark recreational bag limits, time/area closures, bycatch measures, bluefin tuna rebuilding plan, bluefin tuna purse seine cap, yellowfin tuna bag limit, and a limited access permit claim.

5.3.6 Complexity of Each Rule

Neither Rule 1 nor Rule 2 on Table 5.21 were particularly complex. In the case of Rule 1, the regulations related to the recreational bag limits were simplified. The regulations in Rule 3 are complex and complicated because they involve all the regulations for sharks, swordfish, tunas, and billfish. However, because this rule consolidated the regulations and removed duplicative text, this rule actually simplified the process of finding the regulations for Atlantic HMS. In general, many of the regulations in Rule 3 remained unchanged or similar to earlier regulations so individual fisherman should be able to understand the regulations relatively easily. The parts of the regulations that were new and also complex generated many phone calls. These parts included the qualifications and application process for limited access permits and the VMS requirement for pelagic longline fishermen (also complicated by repeated delays and finally a court remand). Other regulations that are not new but that still generate a substantial number of comments include the BFT catch limits for pelagic longline fishermen and effort controls in the BFT fishery. Rules 4 and 5 on Table 5.21 are not particularly complex in that they close areas and times to pelagic longline fishing, prohibit the use of live bait in the Gulf of Mexico, and require the use of line clippers and dipnets. These regulations do not include any additional reporting requirements.

Overall, the complexity of the regulations have increased over time as loopholes in the regulations are fixed and new restrictions are added. NMFS is aware of this situation and has tried to make it easy for fishermen and other constituents to obtain the information they need to make informed decisions. Besides publishing the regulations in the Federal Register (see Table 1.1), NMFS efforts include faxing notices of rulemakings, season closures, and other information to dealers and marinas over our fax network, updating the HMS telephone information hotline, publishing compliance guides in an easy to read question/answer format, placing documents on the HMS website, and answering phone calls.

5.3.7 Extent to Which the Rule(s) Overlaps, Duplicates or Conflicts with Other Federal Rules, and, to the Extent Feasible, with State and Local Governmental Rules

NMFS believes that all its regulations are consistent with and do not overlap with other Federal rules, except where necessary. In some cases, NMFS' regulations may overlap or be inconsistent with State regulations. In all cases, NMFS continues to work with the States to ensure consistent regulations where possible**.**

5.3.8 Length of Time Since the Rule Has Been Evaluated, and the Degree to Which Technology, Economic Conditions, or Other Factors Have Changed in the Area Affected by the Rule.

All of the regulations listed in Table 5.21 were evaluated in 1999 or after. Because it has been so short of a time period, there has not been a great deal of change in technology, economic

conditions, or other factors that would have affected fishing communities on the Atlantic.

5.3.9 Conclusion

If ex-vessel and wholesale prices are a good indicator, the economic health of Atlantic HMS commercial fisheries has declined since 1996 (Tables 5.7 and 5.12). At this point, it is unknown to what degree the economic health of the recreational fisheries has changed since 1996. However, given the status of HMS stocks, NMFS feels that all its current regulations are necessary and will benefit the fisheries economically in the long-term. NMFS continues to work for sustainable HMS fisheries and welcomes comments on any of its regulations and on improving its methods of public outreach.

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